DOCUMENT RESUME

ED 068 893 24 CS 000 192

AUTHOR Ramsey, Wallace Z.
TITLE Evaluation of Assumptions Related to the Testing of Phonics Skills. Final Report.
INSTITUTION Missouri Univ., St. Louis.
SPONS AGENCY National Center for Educational Research and Development (DHEW/OE), Washington, D.C.
BUREAU NO BR-1-G-044
PUB DATE Oct 72
GRANT OEG-7-71-0019(509)
NOTE 73p.

EDRS PRICE MF-$0.65 HC-$3.29
DESCRIPTORS Cognitive Processes; Context Clues; *Grade 2; *Phonics; *Reading Ability; *Reading Difficulty; *Reading Skills; Word Study Skills
IDENTIFIERS Burnett Reading Survey Test; Test of Cognitive Abilities

ABSTRACT

One hundred thirty-eight second graders, identified by their teachers as "poor readers with incomplete phonics skills" were given four specially constructed tests of phonics skills: a context test over meaningful but visually unfamiliar words, an isolated sounds test, a McKee type multiple choice test, and a word completion test. Eighty of the cases were also tested with the Burnett Reading Survey Test and a Test of Cognitive Abilities. The group was normal with respect to intelligence but were poor readers. Scores on the context test were significantly lower than those on the other phonics tests but were correlated higher with the Burnett Word Identification and Word Meaning Tests than any of the others. The factor measured by the context test accounted for a much higher proportion of the variance in the Burnett subtests than did any of the other phonics tests. The context test approach was deemed to be a much more valid diagnostic technique. The patterns of responses on the phonics tests indicated that the Isolation, McKee, and Word Completion tests measure a less mature level of skill than the Context test. This suggests that they might be used to determine if prerequisite abilities have been developed. (Author)

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Final Report

Project No. 1G044
Grant No. OEG-7-71-0019 (509)

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EVALUATION OF ASSUMPTIONS RELATED TO THE TESTING OF PHONICS SKILLS

October 1972

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE

Office of Education

National Center for Educational Research and Development
(Regional Research Program)

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The research reported herein was performed pursuant to a grant with the Office of Education, U. S. Department of Health, Education, and Welfare. Contractors undertaking such projects under Government sponsorship are encouraged to express fully their professional judgment in the conduct of the project. Points of view or opinions stated do not, therefore necessarily represent official Office of Education position or policy.

U. S. DEPARTMENT OF
HEALTH, EDUCATION AND WELFARE

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ABSTRACT

EVALUATION OF ASSUMPTIONS
RELATED TO THE TESTING OF PHONICS SKILLS

One hundred thirty-eight second graders, identified by their teachers as "poor readers with incomplete phonics skills" were given four specially-constructed tests of phonics skills: a context test over meaningful but visually unfamiliar words, an isolated sounds test, a McKee Type multiple choice test, and a word completion test. Eighty of the cases were also tested with the Burnett Reading Survey Test and a Test of Cognitive Abilities. The group was normal with respect to intelligence but were poor readers.

Scores on the context test were significantly lower than those on the other phonics tests but were correlated higher with the Burnett Word Identification and Word Meaning Tests than any of the others. The factor measured by the context test accounted for a much higher proportion of the variance in the Burnett subtests than did any of the other phonics tests. The context test approach was deemed to be a much more valid diagnostic technique.

The patterns of responses on the phonics tests indicated that the Isolation, McKee, and Word Completion tests measure a less mature level of skill than the Context test. This suggests that they might be used to determine if prerequisite abilities have been developed.

Preface

Grateful appreciation is expressed to Selma Dennis and Martha Peistrup, who were instrumental in gathering the data; to Dr. Leo Rodenborn, for helpful suggestions; to Dr. Thomas Schnell, for assistance in utilizing the computer; and to Dr. John Marshall, for help in interpretation of the results. Appreciation is also expressed to Marion Wilson and Al Cooper of the two school systems in which the data were gathered.

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Chapter I

NATURE AND BACKGROUND OF THE STUDY

In 1971, there were several different kinds of phonics ability tests used in reading clinics and classrooms across the United States. The needs of various kinds of teaching personnel had been the impetus to create instruments of varied nature.

For classroom use, for which an instrument was needed that could test groups of children and be fairly easily scored, tests embodying multiple-choice formats were created. The McKee Test of Phonetic Skills was probably the outstanding example of this type. It, like others, required children to listen to a word spoken by the examiner and circle (on the test) the item containing a specific element for which the examiner clued them (such as the word beginning like, ending like, or containing the same vowel sounds as, the stimulus word).

Another type of test used for the same purpose was one containing printed word fragments from which one or more letters had been omitted. In taking the test the child listened to the teacher pronounce the word and then filled in the missing letters. Items organized in this fashion could be used for group testing. As late as 1971, the year the study began, this type appeared in new diagnostic tests of reading.

Two kinds of test items were widely used for individual testing of phonics skills. One of these consisted of having the child look at combinations of letters spelling single consonants, consonant clusters (blends and digraphs), or similar vowel elements, and supply the phoneme (or cluster) commonly spelled by the test item. Such tests were widely used in classrooms and were included in standardized batteries of diagnostic tests such as The Durrell Analysis of Reading Difficulties.

In reading clinics the nonsense word test was popular. Across the nation each clinic of the scores that existed contrived its own test in which combinations of letters were put together to be read by children as if they were real words. Nonsense words were used because an examiner could never be sure that if real words were used as test words they might be <u>sight</u> words and success on a particular item would simply indicate the breadth of a child's sight vocabulary rather than his skill in phonics.

Oral reading errors were also frequently used in clinics as indications of phonics strengths and weaknesses. It was reasoned that if a child miscalled a series of words, examiner attention to the parts that were phonically correct or incorrect would reveal strengths and weaknesses. Such a procedure was the soundest of those used but was very time-consuming and was subject to other weaknesses.

Almost any of the above tests might have been satisfactory if only some rough indication of a child's phonics ability was desired or if some class average was needed. As a matter of fact, hundreds of thousands of children were tested with them for those purposes and some beneficial remedial teaching occurred as a by product. When such tests were used for individual diagnosis, and conclusions drawn concerning one specific child's remedial needs, mistakes were often made and inefficiencies in remedial teaching frequently arose.

In 1971, as the writer examined various tests of phonics skills it became evident that they were as a group, based on a number of unstated and untested assumptions:

1. Listening to a spoken word and telling, or choosing from among alternatives, the letter beginning the word, or contained in the middle or end of the word, is highly indicative of the ability to confront an unknown printed word and supply the same specific sound in the word.

2. Listening to a spoken word and supplying missing letters from its incomplete printed form is highly indicative of being able to supply the sound of the missing letter if it (the letter) was confronted visually in a meaningful word that is visually unfamiliar.

3. Successfully pronouncing a printed word having the same stem as a known word but having a different initial, medial, or final element is highly indicative of being able to supply the sound of the different element if confronted in a meaningful but visually unknown printed word and to pronounce the word.

4. Supplying the phoneme (or phonemes) usually spelled by a letter (or letters) printed in isolation (not as parts of words) is highly indicative of the ability to supply the same sounds when spelled by the same letters in whole words and to pronounce the whole word.

5. Errors on any of the types of tests referred to above are highly indicative that the same type of error will be made in oral reading.

The purpose of the study was to test the above assumptions by comparing results on different phonics tests with strengths and weaknesses revealed on a criterion measure--an oral reading test designed to measure a specific phonics skill in a contextual situation.

History and Related Research

Efforts at individual and small group instruction in reading have continued apace in the modern educational era. Of substantial concern and interest have been decoding abilities--those enabling the student to translate print into its spoken equivalent (Flesch, 1955; Chall, 1968).

In reading clinics and laboratories in 1971 a low pupil-clinician ratio had made possible individual testing and pinpointing of difficulties. Even in clinics and laboratories, however, there had been a wide variation in practices of determining specific weaknesses in word perception. Some clinics used nonsense word tests for such purposes and utilized miscues in oral reading as support for judgments drawn from tests. (Reading clinics at the University of Missouri-Columbia and St. Louis, for example, have used this procedure.) Other clinics have used standardized instruments, such as those authored by Durrell, Gates, Spache, Rosewell, and Chall, and oral reading errors were used as supplementary measures. All of the above were instruments that required individual administration.

Classroom teachers have usually found clinic-used instruments too time-consuming to administer. They have resorted to the use of instruments such as those authored by Botel, McCullough, McKee, Bond, and Clymer. All of these, with the exception of the Botel, used a multiple-choice format.

Criteria for the construction and selection of diagnostic reading tests were formulated by this writer (Ramsey, 1967) and reaffirmed in widely-used publications concerning remedial reading (Harris, 1969).

"There are several criteria that should be met by diagnostic reading tests.... The <u>reality</u> criterion is of primary importance. If a test meets this criterion it will test an ability in much the same manner as the ability used in real reading.... The <u>guessing</u> criterion is met

when it is not possible for the student to guess the correct answer to an item. The purpose of diagnosis is to make possible corrective teaching that is specific to the student's needs.... The possibility of guessing can never be eliminated but the nature of the desired response to an item can reduce the possibility of guessing.... The active criterion is met if the desired response demands some overt, observable behavior from the student as he reacts to an item.... Tests of ability in phonics especially need to meet this criterion as well as the specificity criterion." (Ramsey, 1967, p. 67-68.)

An examination of all the above-mentioned tests of phonics disclosed that all fail to meet one or more of the criteria formulated by the writer (Ramsey, 1967). The weaknesses of some of these tests were described by this writer in the same publication.

A pilot study comparing performance on three types of phonics tests was completed by the writer (Ramsey, 1969) and results reported to the International Reading Association. Experimentation with revised forms of old tests and newly-constructed tests was continued by the writer in field studies in Kentucky and Missouri during 1970.

The Need

In 1971, no test of phonic abilities existed that:

(1) Could be group administered;

(2) Could be administered by classroom teachers without diagnostic reading training;

(3) Met the desirable criteria for diagnostic reading tests (Ramsey, 1967);

(4) Was comprehensive enough so that its results could give clear-cut guidance for remedial instruction;

(5) Had been validated by comparing children's responses on such tests with oral reading miscues in meaningful material.

There existed reading skills programs, utilizing teacher-directed activities (Durrell Speech-to-Print Phonics, as one example), which provided very exact instruction in specific phonics skills. The construction and validation

of a group administered diagnostic phonics test, it was felt, would give classroom teachers a tool which would enable them to make more efficient use of such teaching strategies and programs. This study had, as a secondary objective, to find such a test.

Before such a test could be perfected a number of questions, whose answers have been presumed by experts, needed to be answered through research effort.

The study sought the answers to specific questions as a means of testing the assumptions listed in the previous section:

1. Will there be significant differences in children's total scores on the following types of phonics tests:

   a. Ability to apply phonics in context.

   b. An isolated sound test requiring the subject to give the sound of a consonant letter presented visually and in isolation (not as part of a word).

   c. The McKee Type calling for recognition of written words beginning with the same sound as a word pronounced by the examiner.

   d. The Word Completion Type requiring the subject to supply the missing letter in a written fragment of a whole word pronounced by the examiner.

2. Will the correlations among the total scores on such tests as those designated above be positive and significant?

3. To what extent will blending sounds be a problem--as measured by the incidence of errors when the blendable elements of a word are unknown?

4. To what extent are the McKee, word completion, and isolated sounds tests valid as diagnostic measures of phonic weaknesses when the context test is used as the criterion measure?

In operational terms the study proposed to seek to determine the inter-relationships among childrens' performance on tests requiring them to:

1. Recognize isolated words (familiar in meaning but visually unfamiliar) when flashed at one-tenth second. (hereafter referred to as The Flash Test)

2. Attack in meaningful context the same words previously flashed. (The Context Test)

3. Use consonant substitution to blend word parts and familiar word stems into whole words (to respond on the Context Test).

4. Pronounce the sounds of isolated letters or clusters of letters spelling consonant sound. (The Isolation Test)

5. Identify which of five written words begin with the same sound as a word pronounced by an examiner. (The McKee Test)

6. Insert letters into incomplete printed words (known in meaning but unknown in visual form) after hearing the word pronounced by an examiner. (The Word Completion Test)

As has been previously stated, all of the above had been used by various authorities to determine students' strengths and weaknesses in phonics. There was fairly wide agreement that the ability to recognize unfamiliar words in context was the most valid measure of phonic strength. The time-consuming nature of such activity, and the need for substantial training and experience in the procedure, prevented its widespread use.

All of the tests were individually administered to 137 second grade subjects who were selected by their teachers as having an incomplete knowledge of consonant sound-symbol relationships. The teachers were frank to admit that all were having problems in learning to read.

In addition to the five instruments used in the procedures listed above, 89 of the children were given the Burnett Reading Survey Test, Primary 1 (designed for grades 1.5 to 2.4), Form A. This was given to small groups of children by the examiners.

The results of an intelligence test, The Cognitive Abilities Test (successor to the Lorge Thorndike) were obtained for 89 of the subjects. The test had been administered to them earlier in the year by school counselors.

General Description of the Procedures Used

The study was restricted to ten initial consonant sounds (seven sounds spelled by a single letter, two blends, and one digraph). The chief aim of the study was to determine the relationships between children's ability to perform on different kinds of commonly-used phonics tests.

Five testing instruments were constructed for the study. These included:

(1) A Sight Vocabulary Test - of the ability to recognize on rapid exposure the thirty test words presented in the context test.

(2) A Context Test - thirty items of the ability to recognize in meaningful sentence context the thirty test words presented in the sight vocabulary test.

(3) An Isolated Sounds Test - thirty items requiring the subjects to give the sound for individual letters or pairs of letters spelling consonant sounds.

(4) A McKee Type Test - thirty items requiring the subjects to choose one of five words beginning with the same sound as a word pronounced by the examiner.

(5) A Word Completion Test - thirty items requiring the child to insert one or two letters in an incomplete printed word that was pronounced by the examiner.

All of the words used as test items in the flash test and context test were composed of the initial sounds being tested plus stems that were actual words beginning with vowels, and commonly taught as sight words in first grade material.

All of the data were gathered in a six-week period during November and December, 1971.

CHAPTER II METHODS

Selection of the Population

Second graders whose phonics skill as it related to consonant sound-symbol relationships was rated "incomplete" by their teachers were chosen for the test population. Original plans called for all the writer-constructed tests and standardized reading and intelligence tests to be administered to 150 children. This goal was not quite achieved.

When data gathering was completed, a total of 137 children had been given all of the five specially-constructed reading tests. Only 89 children of the 137 were given the Survey Test of the Burnett Reading Series, Primary 1, designed for children at grade levels 1.5-2.4. Deviation I.Q. scores for 89 children were available from school records.

Complete data was available at the end of testing on eighty cases, forty-seven boys and thirty-three girls. These children had a mean intelligence quotient of 99.6 and the I.Q. distribution had a standard deviation of 12.72 I.Q. points. Thus, the population closely resembled a normal population.

It should be borne in mind that the data gathering was limited by constraints of time, availability of qualified examiners, and availability of subjects. Teachers and administrators were very helpful and tolerant of the requests to make the subjects available at specified times. However, not all requests could be met.

Since so many tests were involved, and it was necessary to administer them all to a given child within a short period, test boredom was a factor in limiting the number of subjects on which complete data could be obtained. Under the circumstances the writer felt that obtaining complete data on eighty children represented a substantial accomplshment.

The children had been taught from a variety of programs in kindergarten, first, and second grade. A large number had been exposed in kindergarten to the Houghton Mifflin Getting Ready to Read program which provides instruction in letter sounds. In first grade a variety of basals were used, including Scott-Foresman, Ginn, Macmillan, Houghton Mifflin and American Book Company linguistic program. Twenty-five had received first grade instruction in the Distar materials published by Science, Research

Associates. In the second grade an even wider variety of material had been used. Almost one-half had received remedial instruction from special reading teachers.

It can safely be said that the reading education of the children involved had not been neglected. The school systems involved rarely employed any teacher who was not fully certified. Salary structures in the systems were good and both districts had been regarded by the State Department of Education and the surrounding community as providing a very adequate quality of education.

All of the data were gathered in two suburban St. Louis School Systems--the Ferguson-Florissant System and the Normandy School System. A total of ninety-eight subjects from the former system, considered by the writer to be somewhat above the typical suburban system in the quality of education provided, were tested. A smaller group was tested in Normandy, a district in transition from all white to a racially integrated one, but one providing at least an adequate quality of education.

All tests were given in the school building in which the child attended classes and in space provided by the system - offices, supply rooms, libraries, and various other rooms in which a private, relatively distraction-free atmosphere could be obtained. Each child was given the entire battery of tests within three days. Usually the testing of a child was completed within one day, usually in two sittings. Tests were given in random order, except that the Flash Test was always given before the Context Test. Since its purpose was to determine which of the test words were in the subject's sight vocabulary, this was necessary.

Construction of the Phonics Testing Instruments

The decision was made early in the study to restrict it to a manageable task. Ten consonant elements used in the initial position in words were chosen for testing. It was presumed that any findings relating to the ten consonants would apply to other consonant elements and to vowel elements, also. The elements chosen for testing were: b, h, m, p, s, t, w, ch, gr, and sp. They represent a wide variety of speech sounds--labials (b,w), glottal (h), nasal (m). high pitched (p, s, t, ch, sp), low pitched (b, m, w, gr), sibilant (s), etc. There is also a variety of ascenders and descenders in the letters from the visual standpoint. All are widely used in spelling common English words.

The Context Test, used as the criterion instrument and against which the other instruments were measured, was constructed with great care. The writer decided to make it resemble the real reading situation actually faced by the children--to the extent that conditions would permit. Several versions were prepared and tried out with children before the instrument used to gather data was completed.

A number of other decisions were made in regard to the criterion instrument:

(1) It should involve reading sentences containing the test words.

(2) The context in which each word appeared should be broader than the sentence containing it, but avoid requiring the child to actually read several sentences to establish the broader context.

(3) It should call for the application of phonics to pronounce a word whose meaning was familiar to the child but whose form was not--i.e. it should not be in his sight vocabulary.

(4) The pronunciation of the test word by the child should place a minimum of challenge to blending ability. (It was reasoned that if pronouncing a word placed major stress on blending ability it might be missed because of lack of sophistication in blending.

(5) Pictures should be included along with the sentences but actual picture clues to the test word should be avoided.

As a first step in building the list of test words, the writer perused the major first grade basal readers used in the St. Louis suburban area where data was to be gathered. Vocabulary charts showing all of the words taught in the readers were constructed. The list was examined to discover which words beginning with vowels were commonly taught in the readers. The writer was looking for words (like at and up) which could be combined with several initial consonants to form words known in meaning to the children but unknown in form. The following words were selected for this purpose: at, it, in, up, and, all, eat, out, old.

The ten letters and letter combinations chosen for testing (b, h, m, p, s, t, w, ch, gr, and sp) were each paired with the ten stems and a series of real words was

generated. Each of the potential test words was examined to determine which were likely to be in the meaning vocabulary of the average seven year old. The list was checked against two sources: A Combined Word List (compiled by B. R. Buckingham and E. W. Dolch in 1936 and published by Ginn and Co.) and A List of 1400 Words Known by 75% or More of First Grade Children in the Enrichment Program of the Columbus (Ohio) Public Schools, compiled by Edgar Dale in 1970 and published in mimeograph form by The Ohio State University.

Thirty words were chosen for use as test items. (it was assumed that in order to produce a test of sufficient reliability that three items testing each sound were needed.) They were: band, bold, bit, hand, heat, hall, meat, mold, mat, pat, pout, pup, seat, sit, sold, tin, tall, told, win, wits, wall, grand, grin, grit, spin, spit, spat, chin, cheat, chat. All of the words, according to the Combined Word List, had been found to be used spontaneously in writing by a majority of second graders. It was presumed that this was an adequate indication that the meaning of each word was known to most second graders.) Nineteen of the thirty words were also on the Dale List referred to above. Field testing convinced the writer that the meanings of the test words were known to most second graders in the schools used in the study.

Each test word was placed in a sentence and its readability checked by use of the Spache formula. Care was taken to place the words in different syntactical positions. An examination of the list used will indicate to the reader the variety of functions (noun, verb, adjectival, etc.) served by the words.

Each of the thirty sentences containing a test word was typed on a card in primer type. Above it was placed a stick figure picture of a scene rationally related to the sentence to be read. On the back of the card was typed two or three sentences putting the test sentence in larger context. The items were randomly arranged in the thirty item test. (Three examples of the cards are included in the Appendix.)

In administering each item the examiner read the context-setting sentences and then asked the child to read the sentence containing the test item. The child was given ample chance to read the sentence without assistance. If he blocked on the item, or made errors on any words in the sentence (except the test word) the examiner read the sentence to him but did not read the test word. Thus the full context was made available.

For the Flash Test fifty words were printed on individual cards arranged on a drum inside the 40020 Synchrotach (manufactured by Lafayette Instrument Co., Lafayette, Indiana), the individual tachistoscope used to determine if the test words were in the children's sight vocabularies.

The test consisted of a series of 50 words with the following components:

(1) A series of eleven of the easiest Dolch 220 Word List was presented in order to train the testees in the use of the Synchrotach and accustom them to recognizing words flashed at one-tenth of a second.

(2) The thirty test words (later to be encountered in the context test) were scattered through the fifty items.

(3) The ten stems (also regarded as easy sight words), which were used as components of the test words, were also included. It was felt that these would reduce the tendency for test boredom to occur during the Flash Test.

A thirty item multiple-choice test of the same type as the McKee Inventory of Phonetic Skills (published by Houghton Mifflin Co.) was constructed. Three items testing each of the ten sounds were made. In choosing words to be included in the test, two precautions were taken: (1) Each of the test words was chosen as one likely to be in the children's meaning vocabularies, and (2) words were avoided that were introduced in first grade readers used by the children. The items were arranged in random order in the test.

The Isolation Test was very simple to construct. The series of tested elements was arranged in a vertical row and in the administration each child was asked to give the sound the letter (or letters) made.

The Word Completion Test was constructed by choosing words from the Dale List that could be used as test items. Each item consisted of a word fragment whose initial letter (or two letters) had been omitted and a base line inserted in its place. Thirty items (three for each sound) were arranged in random order. In administering the test the examiner pronounced the word, used it in a sentence, and then pronounced it again. The child was told to complete the word by writing in the missing letters.

Copies of all tests used in the study are included in the Appendix.

Procedures Used in Gathering the Data

One hundred thirty-seven second graders were give the Flash Test, Context Test, McKee Type Test, the Isolation Test, and the Word Fragment Test during November and December of 1971. These were given in random order, except that the Flash Test was always given preceding the context test in order to determine which of the test words were in the child's sight vocabulary and to increase the chances that the test word stems were known as readily-pronounceable units.

All tests were administered by two graduate assistants, both certified and experienced elementary teachers. They were carefully trained for the test administration by the writer. In order that the reader may understand exactly how the tests were administered, each of the assistants submitted a written description of the procedures used. These are presented verbatim below:

"The child was brought from his classroom to the testing station. I would tell him my name and ask his. A simple explanation was given to the child about what we would be doing. 'We are going to do some word exercises. The results will help us in helping other children learn to read.' I would also make some comment about the day, or the activity in the classroom he just left.

"On a typical day the first test I would administer would be 'Sounds in Isolation.' Showing the child the list of letters, both upper and lower case, and pointing to the first letter, I would ask that he tell me what sound the letter said. In most instances the child would say 'buh' and I would point to the next letter and so on down the list. I would write the sound down next to the letter. There were some children who were not exactly sure of what it was I was asking. Their response might be silence, or just the name of the letter. In these cases I would again repeat my request for the sound the letter represented, or if that still elicited no response, I would say, 'Can you think of a word that starts with this letter.' If one word was suggested, I would ask for a second and a third. Three examples were considered sufficient proof that the child was aware of the pronunciation of the letter. On the other hand, some of the examples served as proof that the child did not know the sound. This was particularly evident with the blends.

"The second test might be the McKee Type sound recognition test. The child was given a cardboard marker and shown how to use it so that only one line would be under consideration at a time. He was instructed to circle the word in the line which started with the same sound as the word I said. In the case of the blends, I more emphatically stated 'circle the one word which starts with the same first two sounds of the word I say.' It was necessary to keep a check on what line the child was examining, so that a correct response was possible.

"Finally, for example, the Word Completion Test was administered. I first folded the paper into thirds, so that each column of words could be considered separately. The same order of sounds was not apparent to most of the students and there was no referring back to what had been written in an earlier column. Before the actual test started, there were three trial items. I would say 'This time we are going to make a word by supplying the missing first sound.' Then, pointing to the first trial item I would say, "This word should be look--Look at the boy run. What has to be put in the space to make the word look?' The child would say 'l' and I would tell him to write it in the space provided. We then went through the same procedure with the words see and boy. Then I would refold the paper so that only one column was exposed, and I would explain that we would be doing the same exercise except that we would be going down each column. I would name the number for each word, say the word, use it in a sentence, repeat the word and wait for the child to write the letter. In the instances where there were two blanks, I would call this to the child's attention saying that two letters were necessary to supply the missing first sound (ch) or sounds (sp or gr).

"At the end of each column I would again refold the paper so that only those words we were working on would be seen. There were only three times when a child overtly recognized that there was a repetition of sounds and would attempt to see what his earlier response was. I would point out that this was not permissable.

"At the end of this test I would tell the child that he was finished with my part of the study. I thanked him for his cooperation and either asked him to bring the next child to me, or I would take him back to his classroom and get the next subject myself. This would depend on the school situation and where the children happened to be at that particular time of the day."

The description of the procedures followed by the other examiner is given below.

"I would give the Flash Test first. Before the child came in, I would set the machine up on a primary table and put a chair at the table for the child. A chair for myself would be placed behind the child's seat and to his right, enabling me to look over his shoulder and into the machine at the same time. I also made sure I had several pencils and the list of words to be flashed placed on a book or clip-board so I could mark it out of the child's line of vision. I then made sure the cards in the machine were at the one marked START. When the child came in I would ask his name and tell him mine. I would put him at ease and we would get acquainted. Then I would ask him if he would help me by doing some things for me.

"I would seat him comfortably at the Synchrotach machine and tell him some words would be flashed in there for him to read. He would have only a quick look at the word and if he knew it, he was to read it aloud. I would then demonstrate, letting him look while I flashed the card marked START several times to give him a chance to become accustomed to the rate of exposure and locate the place the word would appear. I told him not to worry if he didn't know all of the words, but just to do the best he could. I would then say, 'Ready, here's the first word.' I would mark the word on the record sheet with a check mark if he read it correctly. If he waited too long after seeing the word, I would proceed to the next one.

"At the beginning of the list they would usually turn their heads around and tell me the word. I then instructed them to keep their eyes in place on the viewer of the machine so they would be ready for the next word. Each of the test words was exposed one time at one-tenth of a second, and the response recorded. I encouraged each child to say what he thought the word was immediately, and not to deliberate over the word.

"For the starred assumed sight words that he didn't know (or read incorrectly) I would show again at a sustained exposure. If he then couldn't read the word independently, I would read it for him, and then have him pronounce it for me.

"Throughout the test I would say, 'Watch', 'Be ready', 'Here it comes'. If the child showed he was discouraged because he couldn't read several in a row, I commented on how hard he was trying and what a good worker he was.

"At the conclusion of the Flash Test I would say, 'Now let's get up and take a str-e-t-ch, and then I want you to come over to this table and sit beside me.' At the table I had thirty, 3 x 5 cards in order, with the typed sentences to be read to the child on one side, and a picture with a sentence beneath it to be shown to the child, on the other side. I would place the sheet with a copy of all the sentences to be read by the child on my clip-board so I could mark it without the child seeing it. I would say, 'Now it's my turn to read to you. I'm going to read you a little story and then show you a picture. Then I want you to take a turn and read the line under the picture to me. Now if you come to a word you don't know, skip it and go on to the next word. Try to read all the words in the sentence. Then go back to the beginning and read the whole sentence again.'

"I would give him a chance to try and read the words independently first. If, after trying, he couldn't pronounce the word or said he didn't know it, I would supply the word for him. The test word in each sentence was not supplied. If he didn't know the test word, I would tell him to skip it, and go on to the next word. Then after he had been through the sentence once, I would say, 'Now go back and read the sentence again for me.' I would circle every word in the sentence that had to be supplied to the child, and place a check mark on the test word if he got it correct. If he erred, I wrote in the word he used.

"At the end of this test I would thank him for being a good helper and hard worker. Then I dismissed him to his room and asked him to bring the next subject to me."

Eighty-nine of the subjects, an unselected group, were given the Burnett Reading Survey Test, Primary 1, Form A, designed for grade levels 1.5-2.4. It contains a forty item subtest of word identification, a subtest of word meaning also containing forty items, and a forty item test of comprehension.

The test was administered to small groups of children by the project examiners. The entire word identification and word meaning subtests were administered. Only the first ten items of the comprehension test, Set A, with a reading level of middle first grade were given. The examiners reported that the great majority of the children, whose teachers had indicated that their reading was poor, seemed so frustrated and overwrought by their inability to cope with the comprehension subtest that they felt it inadvisable to continue testing beyond the easiest level of the material. It was felt that to continue would have been counter productive and would have produced distorted results.

Chapter III

RESULTS OF THE STUDY

All data gathered in the study were entered on computer tape and the statistics needed were obtained from a computer used by the University of Missouri system at Columbia. The computing center office on the St. Louis campus was the intermediate agency.

The results are reported below in three sections. First, the statistics for the 80 cases on which all items of data were complete are reported. The second section reports the statistics for all 141 subjects on which data were gathered. Finally the results were examined to determine significance of differences in test scores and their interrelationships.

Test Results on Cases with Complete Data

A look at the measured intelligence and the general reading achievement of the group will provide an indication of their potential for learning and the degree to which this had been developed in reading.

The distribution of scores on the Cognitive Abilities Test was obtained and statistics generally descriptive of the group were computed. The results can be seen in Table 1.

An examination of the results in Table 1 indicates that the 80 subjects constituted a group highly similar to normal in intelligence.

The reader will recall that the test examiners used in the study administered the following portions of the subtests of the Burnett Reading Survey to 89 of the subjects in the study:

(1) Word Identification subtest -- all 40 items.
(2) Word Meaning subtest -- all 40 items.
(3) Comprehension subtest -- first ten items, those on the first grade reading level only.

The results for the complete data subjects on the Burnett Test are given in Table 2.

It can be seen from the Burnett results that the group was retarded in all three phases of reading. The results from the Comprehension section should be interpreted with great reservations since only the first third of it was administered.

The reader will recall that in the 80 cases for which complete data were available there were 47 boys and 33 girls. The results on the Flash Test of thirty words used to get a corpus of valid context test words for each subject are shown in Table 3.

Table 1
Deviation IQ
Complete Data Subjects
N=80

Mean intelligence quotient	99.66
Standard deviation	12.73

Table 2
Burnett Reading Test Scores
Complete Data Subjects
N=80

	Word Ident.	Word Meaning	Comprehension
Mean number correct	25.01	24.66	5.5
Percentile equivalent of mean	34	35	2
Standard deviation	4.13	6.24	2.5

Table 3
Flash Test
Complete Data Subjects
N=80

Number possible	30 words
Mean number incorrect	27.14 words
Standard deviation	3.17 words

Table 4
Context Test Scores
Complete Data Subjects
N=80

Number possible	30 words
Mean number correct	12.38 words
Standard deviation	5.68 words

The reader should remember that the number incorrect is shown since the writer was trying to determine which of the test words were not known. These would consistute reasonable test items for the context test. The statistics reveal that for most subjects the 30 item list constituted a list of unknown sight words.

Table 4 above presents statistics for the 80 subjects on the context test.

It can be seen from comparing the results in Tables 3 and 4 that the typical subject was able to decode almost 45% of the test words when they appeared in context.

The results for the other three tests constructed for the study are presented together in Table 5.

An examination of the results reported in Table 5 reveals that the scores on the three phonics tests were very comparable. A comparison of Table 3 with Table 2 indicates that the subjects did substantially less well on the context test than on the other three phonics tests.

In an attempt to get some indication of difficulties encountered in blending known sound combinations into words, the data were analyzed to determine the number of words missed (in the context test) when both the initial sound was known (as measured by the isolation test) and the word stem was known (as measured by the stem test). Table 6 presents the results.

Table 7 combines results from Tables 3, 4, and 6 and indicates the proportion of errors (on the context test) that were probably due to blending problems.

It can be seen from Table 7 that over forty percent of the errors on the context test were due to blending problems.

Test Results on the Total Group of Subjects

It will be recalled by the reader that 141 subjects were given one or more tests in connection with the study. A total of 139 of these took four of the five tests specially constructed for the study. The group contained 80 boys and 61 girls. The statistics relating to the specially constructed tests were computed for the larger group and are reported here to provide some evidence concerning the psychometric quality of the tests.

The results on the Flash Test of thirty words (three for each sound-symbol relationship tested) can be seen in Table 8.

The results shown in Table 8 indicated that for most of the children most of the words on the flash test (words that were later

Table 5
Results on the Other Phonics Tests
Complete Data Subjects
N=80

	McKee	Isolation	Word Completion
Number possible	30	10	30
Mean number correct	27.53	8.66	25
Standard deviation	2.70	1.35	4.76

Table 6
Words Missed with Known Elements
Complete Data Subjects
N=80

Mean number missed	6.62 words
Standard deviation	3.46 words

Table 7
Context Errors due to Blending Problems
Complete Data Subjects
N=80

Mean number real test words (Table 3)	27.14 words
Mean number correct on context test (Table 4)	12.38 words
Mean number errors on context test (27.14-12.38)	15.76 words
Mean number missed with known elements (Table 6)	6.62 words

Table 8
Results on Flash Test
Total Subjects
N=140

Mean number incorrect	27.06 words
Standard deviation	3.01 words
Standard error of measurement	.26 words
Range	16 to 30 words
Kurtosis	2.33
Skewness	-1.61

presented in context) were not sight words. Over half of the subjects knew at sight two words or fewer of the thirty.

The group's performance on the same words presented later in sentence context can be seen in Table 9.

It can be seen that the average student in the study successfully decoded 11-12 of the thirty words (or almost half of the true test words) and that most of the subjects successfully decoded 6-16 words.

Table 10 shows the results of the other three tests specially constructed for the study. It can be seen from an examination of the data in Table 10 and a comparison of it with the data in Table 9 that student performance on the Context Test was considerably poorer than that on the other three tests.

One question of concern in any reading research study is the differential achievement of the boys in the study as compared with that of the girls. The test results for the 47 boys and 33 girls constituting the group of 80 on which complete data were obtained were compared to determine the equivalency of the two groups in important given variables and in achievement. Table 11 illustrates the differences in the two groups and the statistical significance of the differences.

It can be seen from Table 11 that the comparative performance of boys and girls on the tests used in the study were different in only two respects -- the Burnett Word Meaning and Burnett Comprehension scores. Only the difference in the means on the Comprehension Test were significant at the .01 level of confidence.

In an effort to secure some indication of the difficulties students had with blending sounds to pronounce the words on the Context Test two other conditions were examined. The number of words missed when a pupil knew its initial sound (as measured by the Isolation Test) and its stem (as determined as part of the Flash Test) was calculated. The number of words missed when both elements were known can be seen in Table 12.

Test Score Differences and Interrelationships

A re-examination of Table 3 will reveal that the scores on the Flash Test for the 80 subjects for whom data on all measures was available varied from 16 to 30 words missed. This meant that the number of words that were true test words on the Context Test for each child varied from 16 to 30. It is worthwhile to remember, also, that the four tests (Context, Isolation, McKee, and Completion) were mastery tests. For these reasons, the writer felt that a simple comparison of mean scores on the four tests would not be optimally revealing. Therefore, it was decided to compare the ratio of number right to number possible on each test with the same statistic on all of the other tests.

Table 9
Context Test Results
Total Subjects
N=140

Mean number correct	11.53 words
Standard deviation	5.87 words
Standard error of measurement	.50 words
Range	1 to 24 words
Kurtosis	- 0.79
Skewness	.05

Table 10
Results on the Other Constructed Tests
Total Subjects

	McKee	Isolation	Word Completion
Number possible	30	10	30
Mean number correct	26.7	8.3	23.7
Standard deviation	4.0	2.0	6.1
Standard error of measurement	0.34	0.17	0.52
Range	5 to 30*	0 to 10*	0 to 30*
Kurtosis	8.36	5.6	2.62
Skewness	- 2.57	- 2.12	- 1.48
Number completing test	139	139	137

*On the McKee Type Test 30 children scored 30.
*On the Isolation Test 3 children scored zero and 46 scored 10.
*On the Completion Test 2 scored zero and 23 scored 30.

Table 11
Significance of Difference in Means
Boys vs. Girls
Complete Data Group

Variable	B. Mean (N=47)	S. D.	G. Mean (N=33)	S. D.	** T.Val.	Signif.
4 Flash Raw Score	27.6	3.0	26.5	3.3	-1.53	No
5 Context Raw Score	12.6	5.6	12.1	5.9	-0.37	No
6 Isolation Raw Score	8.7	1.4	8.6	1.2	-0.49	No
7 McKee Raw Score	27.3	3.0	27.9	2.2	1.12	No
8 Completion Raw Score	24.8	4.8	25.3	4.7	0.48	No
9 W. Missed	6.8	3.7	6.4	3.2	-0.51	No
10 Burn. WI	24.3	4.2	25.9	3.9	1.79	No
11 Burn. WM	23.4	6.2	26.5	6.0	2.24	Yes
12 Burn. Comp.	4.9	2.3	6.4	2.5	2.87	Yes
13 IQ	100.1	11.6	99.1	14.3	-0.34	No
14 Context converted*	.467	.223	.474	.25	.11	No
15 Isolation converted*	.872	.144	.857	.123	.49	No
16 McKee converted*	.908	.100	.930	.075	1.12	No
17 Completion converted*	.826	.160	.843	.158	.48	No

*In each case the number correct was divided by the total number possible correct on the test.

**T Values must be greater than 2.58 to be significant at the .01 level and greater than 1.97 to be significant at the .05 level.

Table 12
Errors due to Blending Difficulties
Total Subjects
N=137

Mean number missed	7.1 words
Standard deviation	4.1 words
Standard error of measurement	0.35 words
Range	*0 to 21 words
Kurtosis	.40
Skewness	.61

*Only four students missed no words in this category.

Table 13
Significance of Difference Between Mean Ratios
of Rights Divided by the Number Possible
Complete Data Cases
(N=80)

	Mean	S. D.	T. Value	Significant at .01
14 Context Test	.4704	.233		
			18.34	Yes
15 Isolation	.8662	.135		
14 Context Test	.4704	.233		
			20.12	Yes
16 McKee Test	.9175	.090		
14 Context Test	.4704	.233		
			17.76	Yes
17 Word Completion Test	.8333	.158		
15 Isolation Test	.8662	.135		
			4.06	Yes
16 McKee Test	.9175	.090		
15 Isolation Test	.8662	.135		
			2.63	Yes
17 Word Completion Test	.8333	.158		
16 McKee Test	.9175	.090		
			6.35	Yes
17 Word Completion Test	.8333	.158		

After the ratios were determined they were subjected to comparative analysis. First, the mean ratio scores for the total group on each variable were compared and the significance of differences determined. Table 13 shows the results.

It can be seen from Table 13 that the differences between the means of the four tests constructed were all significant at the .01 level of confidence. However, the T values for the Context Test compared with the other three tests were much greater than the T values obtained when the other three tests were compared with each other.

Next, the intercorrelations among the various ratios and standardized reading test scores were determined. Table 14 gives the findings.

Table 14 shows that the Context Test had a higher correlation with each of the Burnett subtests than any of the other three phonics tests. In fact none of the other three had a significant correlation (at the .01 level of confidence) with the comprehension section of the Burnett.

Table 15 gives the correlations between tests when all usable data were included in the calculations. It can be seen that the results were not materially different from those obtained with the 80 cases on which complete data were obtained.

The responses of 72 subjects chosen at random were examined in detail to determine the degree of agreement of the tests on whether specific sound-symbol relationships had been mastered. The criterion used to indicate failure was two or three items missed on each relationship measured by the Context, McKee Type, and Completion, and one item missed on the Isolation Test (which used only one test item per relationship). Table 16 shows the results.

Table 16 should be interpreted as follows: four subjects missed at least two of the three items on each of the ten sounds tested and missed an average 2.25 sounds on the Isolation Test, 1.0 on the McKee and 2.0 on the Word Completion, etc.

It can be observed from Table 16 that if the Context Test is used as a criterion test of phonics, the other three tests greatly underestimate a child's phonics weaknesses.

An examination of the tabulated results indicated one other fact: in the 72 cases there were only ten instances in which the Isolation Test detected a weakness but the Context Test did not register it as a weakness.

In like manner - the McKee type registered eight instances of weaknesses not noted by the Context Test and the Completion registered ten not indicated by the Context Test.

Table 14
Correlation Table
All Test Variables
Complete Data Cases
(N=80)

TESTS	11	12	13	14	15	16	17
10 Burnett Word Identification	.59	.51	.19*	.65	.46	.48	.56
11 Burnett Word Meaning		.66	.29	.62	.38	.35	.47
12 Burnett Comprehension			.22*	.45	.14**	.19*	.26*
13 Deviation I.Q.				.26	-.12**	.11**	.04**
14 Context Test					.56	.55	.62
15 Isolation Test						.56	.72
16 McKee Type Test							.67
17 Word Completion Test							

All correlations are significant at the .01 level except as starred:

*Significant at the .05 level but not at the .01 level.
**Not significant.

Table 15
Correlation Table
All Test Variables
Total Cases
(N=137 to 141)

TESTS	11	12	13	14	15	16	17
10 Burnett Word Identification	.61	.52	.19*	.66	.45	.40	.55
11 Burnett Word Meaning		.65	.29	.63	.35	.38	.43
12 Burnett Comprehension			.22*	.47	.14**	.15**	.26
13 Deviation I.Q.				.22	-.14**	.05**	.05**
14 Context Test					.54	.54	.69
15 Isolation Test						.50	.67
16 McKee Type Test							.60
17 Word Completion Test							

All correlations are significant at the .01 level except:

*Significant at the .05 but not the .01 level.
**Not significant at the .05 or .01 levels.

Table 16
Agreement of Tests on Specific Sounds Missed
(N=72)

No. of Subjects	No. of Context Errors*	Mean Isolation Errors*	Mean McKee Errors*	Mean Word Completion Errors*
4	10	2.25	1.0	2.0
2	9	1.5	1.0	2.5
5	8	1.8	1.6	2.6
2	7	1.0	None	1.0
16	6	1.5	.8	1.0
4	5	1.25	.25	2.5
12	4	.5	.16	.9
5	3	.2	None	.4
13	2	.46	None	.23
6	1	.16	None	None
3	0	None	None	None

*Out of a possible 10 sounds.

The differential responses on the four tests by three individual children chosen at random were noted. The results can be seen in Table 17.

Table 18 shows the results obtained when the effects of various test performances were partialed out of correlations shown in Table 14. This was done in order to determine the order of importance of the Context Test variable as it related to the Burnett Test of Word Identification and Burnett Test of Word Meaning when the effects of the other three tests were removed through partial correlation.

Table 19 shows the order of importance of the other test variables as they related to the word identification and word meaning tests when the effects of the Context Test were partialed out.

It can be seen by examining Tables 18 and 19 that the Context Test accounted for a much higher proportion of the variance in the scores on the Burnett Tests of Word Identification and Word Meaning than did any of the other three tests. Most of the correlation of the other tests with the Burnett tests could be accounted for by the effects of the Context Test.

The variance accounted for by the effects of the Context Test on the Burnett Test of Word Identification was as follows:

Without partialing:	42%
With Isolation Test effects partialed out:	28%
With McKee Test effects partialed out:	27%
With Word Completion Test effects partialed out:	21%

The variance accounted for by the effects of the Context Test on the Burnett Test of Word Meaning was as follows:

Without partialing:	38%
With Isolation Test effects partialed out:	28%
With McKee Test effects partialed out:	29%
With Word Completion Test effects partialed out:	22%

Summary

This chapter has presented the statistical results obtained in this study. Mean scores and standard deviations on all the tests used in the study, both constructed and standardized, for the eighty subjects on which complete data were obtained were presented. These included measures of flash recognition of test words, ability to use phonics in context, ability to respond to a McKee Type phonics test, ability to give sounds for isolated letters, ability to complete written word fragments when the word was pronounced, and measures of Word Identification, Word Meaning, and Comprehension on the Burnett Reading Survey Test. Measures of deviation I.Q. were also obtained. Means and standard deviations, as well as the standard error of

Table 17
Comparison of Specific Cases
on Defective Sounds Noted
by Each Test

Subject 6 A Girl	b	h	m	p	s	t	w	ch	gr	sp
Context Test, deficient sounds	x	x	x	x	x	x	x	x	x	x
Isolation Test, deficient sounds								x	x	x
McKee Test, deficient sounds								x	x	
Completion Test, deficient sounds					x				x	x
Subject 25 A Boy										
Context Test, deficient sounds	x	x				x		x	x	
Isolation Test, deficient sounds										x
McKee Test, deficient sounds										
Completion Test, deficient sounds										
Subject 3 A Boy										
Context Test, deficient sounds	x	x				x		x	x	x
Isolation Test, deficient sounds									x	
McKee Test, deficient sounds										
Completion Test, deficient sounds	x	x						x	x	

Table 18
Partial Correlation Results
Complete Data Cases
(N=80)

	Test Combination	Pearson Correlation	Partialed Variables: Isolation Test	McKee Test	Word Completion Test
1.	Context and Burnett Word Identification	*.65	*.53	*.52	*.46
2.	Context and Burnett Word Meaning	*.62	*.53	*.54	*.47

*All correlations significant at the .01 level.

Table 19
Partial Correlation
Complete Data Cases
(N=80)

		Isolation Test	McKee Test	Word Completion Test
1.	Burnett Word Identification with:			
	Pearson correlations	*.46	*.48	*.56
	With Context Test partialed out	.15	.20	.27
2.	Burnett Word Meaning with:			
	Pearson correlations	*.38	*.35	*.47
	With Context Test partialed out	.04	.01	.14

Starred correlations are significant at the .01 level. All others are not.

measurement, were obtained for the more than 135 subjects given all of the constructed tests.

Measures of the errors due to blending difficulties were also obtained.

The significance of differences between means on the four constructed tests were determined. The responses of 72 subjects were examined to determine the agreement of the four constructed tests on the specific sound-symbol relationships mastered. Three cases were examined to determine the effect of using one test as the criterion test and comparing performance on the others with it.

The comparative performance of boys and girls on the tests used in the study were also examined to determine significant differences in scores of the two groups.

Finally, the order of importance of the various abilities measured by the constructed tests were determined through partial correlation.

A further discussion of these findings and their implications will be presented in Chapter 4.

Chapter IV

CONCLUSIONS

Summary of the Findings

1. The eighty subjects on which complete data (all measures) were obtained constituted a near-normal group as far as measured intelligence was concerned (Table 1).

2. The Burnett Reading Survey Test revealed that the eighty complete data subjects were poor readers in word identification, word meaning, and comprehension (Table 2).

3. A flash test of whole words likely to be familiar in meaning but unfamiliar in form revealed that for most subjects the words were visually unfamiliar (Table 3). These words were included in a test of the ability to use them in context.

4. The subjects were able to use phonics skills to decode 45 to 50 percent of the test words appearing in the context test (Table 4).

5. The scores of the eighty complete data subjects on three other phonics tests (an isolated sounds test, a McKee type test, and a word completion test) were much higher than on the context test. Raw scores were about 50% greater (Tables 4, 5).

6. About forty percent of the errors on the Context Test were due to blending problems (Table 6).

7. The performance of the total group of 141 subjects (on whom data were gathered) on the tests contructed for the study were highly similar to that of the smaller group of eighty on whom complete data were available (Tables 8, 9, 10, 11).

8. The comparative performance of boys and girls on the battery of tests was very similar (Table 11).

9. The differences between the means of the battery of phonics tests were significant (Table 13).

10. The Context Test had a higher correlation with the three Burnett subtests than the other three writer-constructed tests of phonics (Tables 14 and 15).

11. There was a low level of agreement between the Context Test and the other three phonics tests on the errors on specific sounds. It was unusual for a weakness to be detected by the Isolation, McKee, or Word Completion Tests and yet go undetected by the Context Test (Tables 16 and 17).

12. The use of partial correlation procedures revealed that the Context Test accounted for a high proportion of the variance in the scores on the Burnett Word Identification and Word Meaning Tests. It was much greater than that accounted for by either of the other three phonics tests (Tables 18 and 19).

Discussion of the Findings

The findings reveal that the subjects in the study were a group of poor readers, average in intelligence. Their scores on the word identification and word meaning tests revealed that their word perception skills were in an incomplete stage of development. The technique of using a flash test to determine if certain words are in children's sight vocabularies and then using the same words in a test designed to assess their phonics skills is a workable and useful one -- judging from the results of this study.

Since the Context Test very closely simulates the real-life situation in which a child is most frequently called upon to apply his phonics skills, it logically offers the most efficient type of diagnostic instrument.

The abilities used to decode an unfamiliar word when it appears in context are different from those used in responding to items of the type appearing on tests of isolated letter sounds, multiple choice tests calling for sound-letter matching (the McKee type test), or to printed word fragments visually completed when the word is pronounced. A context type test calls for a substantially higher level of skill than the other three. Neither the Isolation Test, McKee type, or Completion Test are suitable for accurate diagnosis of phonics weaknesses.

The Context Test, since its results correlate fairly high with a test of word identification, and account for a fairly high proportion of the variance on such a test, is a valid measure of the ability to identify isolated words.

The assumptions on which much testing of phonics skills have been based (see pages three and four) have not been valid ones, if this study is an indication of their validity, and should not be used by diagnosticians. The technique used in this study for the measurement of such skills is logically and statistically a much more defensible one.

It is evident that many of the second graders who were subjects in this study had learned several things in relation to phonics but had not yet learned to apply phonics in reading. The question arises, "Did the tests used in this study (other than the Context Test) measure some lower stages in learning phonics -- stages through which children normally pass before achieving the stage at which they can apply it?" For the educational welfare of the children involved in the study (and probably for many hundreds of thousands, maybe

millions, who are similarly taught in American schools) it is hoped that this is true.

Will these children, and all children fitting the description, reach maturity in the use of phonics? Again, the answer is "Yes, we hope so." It is not known exactly what teacher and pupil activities will be needed to help them reach that maturity. Will workbook exercises suffice? Are teacher demonstrations showing children how to blend separate sounds and phonograms needed -- in view of the weaknesses in blending ability revealed by the study? Will wide reading in interesting but mildly challenging material (containing a low density of unknown words which can be decoded through phonics) be important in helping them reach maturity in phonics? In all likelihood all of these activities (and still others suggested in references on reading and in guidebooks to accompany basal readers) will be needed by these children.

The monitoring of the children's development in reading, and planning activities to promote their skill, are functions to be provided by competent and interested teachers. The involvement of such teachers in our schools continues to be vitally needed.

Competent teachers become more competent when they are provided with more sophisticated diagnostic instruments. It is the hope of the writer that this study has moved the profession a little farther along that road.

Further Research Suggested

The results obtained in the study described here need to be subjected to further analysis to determine if one or two test items per sound to be tested would yield an instrument of sufficient validity and reliability to warrant its use. If so, it would result in a shorter instrument that could be administered more quickly.

One type of diagnostic instrument, the nonsense syllable test, was not used with the subjects. Administration of it, and some of the other tests used in this study, should be done to see if it would yield results more highly related to those obtained with the context test. The findings might suggest the usefulness of a shorter, more readily administered instrument.

Both of the studies suggested above are in the planning stages.

APPENDIX A

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TESTS USED IN
THE STUDY

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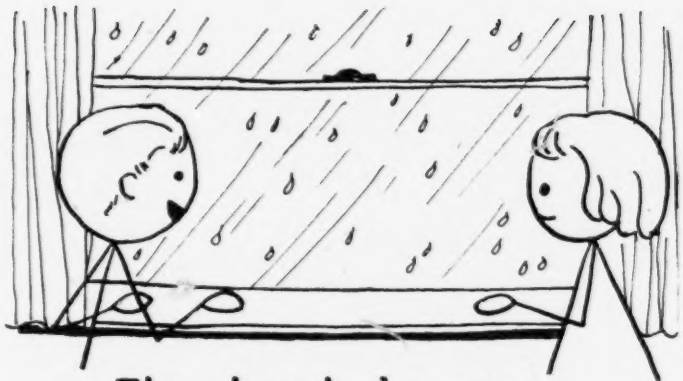
Synchrotach Test Words

Child's Name_____Teacher_____School_____

		First Attempt	Revision			First Attempt	Revision
*1.	me			26.	hand		
*2.	boy			27.	mat		
*3.	the			*28.	it		
*4.	girl			29.	pout		
*5.	she			30.	seat		
*6.	look			31.	tall		
*7.	jump			*32.	in		
*8.	big			33.	win		
*9.	down			34.	chat		
*10.	see			35.	grand		
*11.	play			*36.	all		
12.	bit			37.	spat		
13.	hall			38.	band		
14.	meat			39.	heat		
*15.	and			40.	mold		
16.	pup			*41.	eat		
17.	sit			42.	pat		
18.	tin			43.	sold		
*19.	out			44.	told		
20.	wall			*45.	at		
21.	cheat			46.	wits		
22.	grin			47.	chin		
*23.	up			48.	grit		
24.	spit			*49.	old		
25.	bold			50.	spin		

SAMPLES OF TEST CARDS

Billy and Susie are happy. It has been a hot day. Now it is raining. Billy is telling Susie something.



Mary has been sick. She had the mumps. Her mother thinks she is almost well. Mary is telling her she is still sick.

Billy wants Joe to go to the ball game. He wants Joe to play. Read what he is saying to him.

Context Test

Consonant Sentences

1. A pup is what I want.
2. The bread has mold on it.
3. They will walk into the hall.
4. A bold dog will bite.
5. I will put it on the wall.
6. I want you to sit here.
7. It is made of tin.
8. She has a grin on her face.
9. We can win that game.
10. She will spit at you.
11. She will pout all day.
12. Use the mat on the floor.
13. Hand me the dress, please.
14. I will read a little bit.
15. They cheat to win.
16. We sold our house.
17. He is a tall boy.
18. I had a grand time.
19. They have a little chat.
20. They had a spat.
21. They will give him a pat.
22. I like to eat meat.
23. The heat is over.
24. He hears the band playing.
25. He has his wits about him.
26. They want a good seat.
27. I told you to come in.
28. I will grit my teeth.
29. My chin still hurts.
30. It can spin fast.

Isolation Test

Directions for Examiner

Give the child a copy of the Isolation Test Sheet. Point to the letter b and ask him to give you its sound (the expected answer is "buh"). If he gives you its name, say "Yes, that is the name of that letter. What sound does it stand for?"

Accept his answer and write it in the space following the b on the Testing Tabulation Sheet. Then ask him to tell you three words that begin with the sound b. Write them in the proper spaces.

Proceed through the entire list in this fashion. Give praise for an occasional correct answer or for trying. DO NOT TELL THE CHILD HE IS WRONG, IF HE IS. If he gives an answer in a questioning tone, ask him to be definite.

ISOLATION TEST

Child's Sheet

1. b B
2. h H
3. m M
4. p P
5. s S
6. t T
7. w W
8. ch Ch
9. gr Gr
10. sp Sp

McKee Type Test
Directions for Page One

I am going to read you some words. Each time I want you to circle a word (draw a ring around the word) that begins with the same sound as the one I read.

Ready? Put your marker under Row 1. Circle the one beginning like banana. Draw a ring around it. (AFTER EVERY ITEM CHECK TO SEE IF THE CHILD HAS CIRCLED A WORD IN THE PROPER ROW.)

Now move your marker down to Row ____. Circle the word beginning like ____. Continue in this fashion. Use the words below as stimulus words for the rows as numbered:

For those words whose numbers are boxed, give the following directions: "For this word I want you to circle the word that begins with the same first two sounds as the word I say. You will need to listen very closely.

1. banana	11. bite	21. burn
2. salt	12. serve	22. soldier
3. tablet	13. tears	23. tire
4. pipe	14. push	24. parade
5. hook	15. hole	25. hung
6. mistake	16. move	26. music
7. won	17. wiggle	27. wash
8. cheese	18. chicken	28. church
9. [spank]	19. [spider]	29. [spent]
10. [grumble]	20. [grownup]	30. [grocery]

McKee Type Test

Pupil's Copy

NAME_____

SCHOOL_____TEACHER_____

Circle the word that begins with the same sound as the word pronounced by the examiner.

1.	tell	dell	bell	fell	sell
2.	ring	thing	sing	wing	bring
3.	hail	tail	wail	rail	bail
4.	pack	rack	black	lack	back
5.	deal	heal	meal	peal	seal
6.	rice	nice	mice	lice	dice
7.	farm	harm	charm	alarm	warm
8.	chalk	talk	calk	shock	stalk
9.	send	trend	spend	bend	fend
10.	cab	grab	glad	lab	dab
11.	bake	rake	take	cake	fake
12.	same	came	game	dame	lame
13.	wag	bag	tag	gag	drag

McKee Type Test

Pupil's Copy
Page 2

14.	match	patch	latch	catch	batch
15.	bang	fang	rang	hang	sang
16.	mean	bean	lean	wean	clean
17.	wife	life	fife	rife	strife
18.	grange	strange	change	clang	shock
19.	steed	reed	seed	deed	speed
20.	fade	shade	grade	trade	glade
21.	tank	sank	lank	rank	bank
22.	gave	cave	nave	save	pave
23.	reach	leach	peach	beach	teach
24.	grass	pass	mass	lass	bass
25.	bunt	grunt	punt	runt	hunt
26.	nix	fix	mix	chix	six
27.	wore	core	fore	more	bore
28.	cop	shop	mop	top	chop
29.	spell	well	sell	tell	smell
30.	mow	gow	row	grow	brow

Completion Test
Directions

Read the directions on his test to the child. Dictate the words for the three trial items:

look	Look at me run.	look
see	I see some candy.	see
boy	The boy had a dog.	boy

When you are sure he knows what to do, dictate the words below and the sentence in which each is used. Pause after each until the child completes the item. As he does each item make sure you can tell what letter he puts in. If you can't read what he writes, ask him what the letter is.

1.	pair	He had on a pair of sox.	pair
2.	mouse	A mouse ran across the floor.	mouse
3.	hose	The hose squirted water.	hose
4.	barn	The horses lived in a barn.	barn
5.	wave	We will wave goodbye.	wave
6.	salad	For lunch we had a green salad.	salad
7.	tie	She will tie a bow in the string.	tie
8.	chalk	The chalk leaves dust on the ledge.	chalk
9.	spill	Babies sometimes spill their juice.	spill
10.	gravy	Mary likes gravy on her meat.	gravy
11.	park	I will park the car outside.	park
12.	mud	Some children like to make mud pies.	mud
13.	hurt	She hurt her finger on the door.	hurt
14.	bend	He will bend over and pick it up.	bend
15.	wing.	The bird's wing was blue.	wing
16.	sad	He was sad because he lost his money.	sad
17.	toast	He had toast and an egg to eat.	toast
18.	chill	Chill the soda in the refrigerator.	chill
19.	spoon	I use a spoon to stir my tea.	spoon
20.	ground	He will plant the tree in the ground.	ground
21.	paper	Write your name on the paper.	paper.

For boxed items:

Call the child's attention to the fact that two letters are missing. Watch closely to see if he writes in two letters. If he doesn't, remind him there are two letters missing.

22.	month	In what month were you born?	month
23.	hid	I hid the key in the drawer.	hid
24.	body	The snake's body is long.	body
25.	witch	The witch came flying by on her broom.	witch
26.	seed	Tom grew this plant from seed.	seed
27.	teeth	Mary brushes her teeth at bedtime.	teeth
28.	chew	The dog will chew on the bone.	chew
29.	speak	Mary will speak to the teacher.	speak
30.	grape	This grape is purple.	grape

COMPLETION TEST

Child's Copy

Listen to the teacher say these words. Print the missing letter in the blank.

Trial items: _____ook _____ee _____oy

1.	_____air	11.	_____ark	21.	_____aper
2.	_____ouse	12.	_____ud	22.	_____onth
3.	_____ose	13.	_____urt	23.	_____id
4.	_____arn	14.	_____end	24.	_____ody
5.	_____ave	15.	_____ing	25.	_____itch
6.	_____alad	16.	_____ad	26.	_____eed
7.	_____ie	17.	_____oast	27.	_____eeth
8.	__ __alk	18.	__ __ill	28.	__ __ew
9.	__ __ill	19.	__ __oon	29.	__ __eak
10.	__ __avy	20.	__ __ound	30.	__ __ape

APPENDIX B

POTENTIAL TEST WORDS
FAMILIARITY OF THE MEANING OF THE TEST WORDS
TESTABLE ELEMENTS
WORDS MISSED BY SOUNDS WHEN BASIC ELEMENTS WERE KNOWN
WORDS CORRECT WHEN BASIC ELEMENTS WERE KNOWN

Potential Test Words
Single Initial Consonants

	and	in	eat	it	all	am	as	is	old	up	us	at	out
b	band	bin	beat	bit	ball				bold		bus	bat	bout
c(s)													
c(h)					call				cold	cup		cat	
d		din				dam							
f		fin	feat		fall				fold			fat	
g(h)				git	gall				gold		Gus	gat	gout
g(s)		gin											
h	hand		heat	hit	hall	ham	has	his	hold			hat	
j													
k		kin											
l	land			lit		lam							lout
m			meat		mall				mold			mat	
n			neat									Nat	
p		pin	peat		pall					pup	pus	pat	pout
q													
r						ram						rat	rout
s	sand	sin	seat		stall	Sam			sold			sat	
t		tin			tall	tam		tis	told			tat	
u													
v													
w		win		wit	wall								

Underlined words are within second grader's meaning vocabulary (according to A Combined Word List) and have not appeared as sight words in their readers (according to "A Basic Word List from Basal Readers" by David Stone and Velda Bartschi.)

Potential Test Words
Consonant Blends and Digraphs

bl	bleach	blend					
cl	clam	clear	clover				
fl	flat	flour					
gl							
pl	plus						
sl	slam	slit	slice				
br	brand	brat	breach				
cr	cram						
dr							
fr							
gr	grand	grit	grin				
pr	price	preach					
tr	treat						
sc	scat	scold	scout	scour			
sk	skin						
sm	small	smear					
sp	spat	spear	spend	spice	spit	spout	spin
st	stall	stand	stout				
sw	swam	swarm					
sh	shout						
ch	chat	cheat	chin	chair			
th	that	thin					

Underlined words are within second grader's meaning vocabulary (according to A Combined Word List) and have not appeared as sight words in their readers (according to "A Basic Word List from Basal Readers" by David Stone and Velda Bartschi).

Testable Elements for Children Who Have Had
Scott Foresman (Sixties) or Macmillan (1965)
First Grade Materials

Stems	b	h	m	p	s	t	w	gr	sc	sp	st	ch
and	X	X			X			X			X	
in				X		X	X	X		X		X
eat		X	X									X
it		X			(X)		X	X		X		
all		X				X	X				X	
old*	X		X		X	(X)			X			
at	X	X	X	X					X	X		X
out*				X					X		X	
up				X								

*Not taught as sight words in Scott Foresman, at first grade level.

(X) Taught as sight words in Macmillan at first grade level.

Familiarity of the Meanings of Test Words*

band	KU	seat	KU	scold	F2
bold	F2	sit	KU	scat	F2
bit	KU	sold	KU	scout	F2
hand	KU	tin	KU	spin	KU
heat	F2	tall	KU	spit	F2
hall	KU	told	KU	spat	F2
meat	KU	win	KU	stand	KU
mold	F2	wit	F2	stall	F2
mat	F2	wall	KU	stout	F2
pat	KU	grand	F2	chin	F2
pout	F2	grin	F2	cheat	F2
pup	F2	grit	F2	chat	F2

*As determined by consulting A Combined Word List. KU after a word indicates that a word is one of the 2500 most frequently used words of preschool children. The designation F2 indicates that a word was one of the 984 most frequently written spontaneously by second graders at the end of the year. The writer has assumed that if a word was written spontaneously at the end of second grade, its meaning was very likely familiar in meaning at the beginning of that grade.

Words Missed by Sounds When Basic Elements Were Known.

band	42*	tall	22
bit	42	tin	46
bold	43	told	7
hall	54	wall	2
hand	23	win	18
heat	50	wits	86
mat	18	chat	30
meat	13	cheat	22
mold	23	chin	33
pat	47	grand	40
pout	51	grin	41
pup	42	grit	44
seat	10	spat	33
sit	22	spin	10
sold	33	spit	45

*139 Possible errors on each item.

Words Correct When Basic Elements Were Known
(N=139)

wall	137
told	132
sit	129
spin	129
meat	126
win	121
mat	121
cheat	117
sold	117
tall	117
mold	116
hand	116
chat	109
spat	109
chin	109
grand	99
bit	98
grin	98
pup	97
band	97
seat	97
bold	96
grit	95
spit	94
tin	93
pat	92
heat	89
pout	88
hall	85
wits	53

CUMULATIVE VOCABULARY
(Next Page)

Key to Symbols Used:

Hpp	=	Houghton Miflin pre-primer
Hp	=	Houghton Miflin primer
Hl	=	Houghton Miflin first reader
Spp	=	Scott Foresman pre-primer
Sp	=	Scott Foresman primer
Sl	=	Scott Foresman first reader
M-Spp	=	Macmillan sight word in pre-primers
M-Sp	=	Macmillan sight word in primer
M-Sl	=	Macmillan sight word in first reader
M-*Asp	=	Macmillan "assumed" word in primer
M-*Asl	=	Macmillan "assumed" word in first reader
M-**Atp	=	Macmillan attack word in primer
M-**Atl	=	Macmillan attack word in first reader

*The Macmillan readers define assumed words as "words pupils are expected to identify independently with skills that have become well established."

**The Macmillan readers define attack words as "words which many pupils will be able to identify with the aid of word analysis skills developed prior to that time for which other pupils will require additional supervised skills practice."

CUMULATIVE VOCABULARY
First Grade Basal Readers
Three Publishers

	A
a	Hpp, Spp, M-Spp
about	Hp, Sl, M-Sp
after	Hp, M-Spp
again	Hl, M-Sp
air	M-Atl
airplane	Hl, M-Sl
airplanes	M-Sl
all	Hp, Sp, M-Atp
along	Hl
am	Hp, M-Atl
an	Hl, M-Atl
and	Hpp, Spp, M-Spp
animals	Hl, Sp
another	Hp
anything	Hl, M-Sl
apartment	M-Sl
apartments	M-Asl
are	Hpp, Sp, M-Sl
around	Hp, M-Sp
as	Hp
ask	Hp, M-Spp
asked	Hp, M-Spp
asks	M-Asp
astronaut	M-Sl
at	Hp, Spp, M-Atp
away	Hp, Spp, M-Sp

	B
baby	M-Sp
back	Hp, M-Sp
bad	Hp, M-Atp
bag	Hl
bake	M-Atp
ball	Hpp, Spp, M-Spp
balloon	M-Sl
barn	M-Atl
be	Hpp, Sl
bears	Hl
because	Hl
bed	Hpp
before	Hl, M-Atl
began	Hl, Sl, M-Atl
belong	Hl
Ben	M-Sl
Ben's	M-Asl
best	M-Sl
Betsy	M-Sl
Betsy's	M-Sl
better	Hl
Betty	M-Spp
big	Hpp, Spp, M-Spp
bike	M-Spp
Bill	Hp
Billy	Sp
Billy's	M-Asp
bird	Sl, M-Sp
birds	M-Asp
birthday	Hp, Sp, M-Sl
black	Hp, M-Atl
blankets	Hl
blast	M-Sl
blast-off	M-Sl
blue	Hl, Sp, M-Spp
boat	Hl, M-Atp
boats	M-Asl
Bob's	M-Sl
Bolo	M-Spp
Bolo's	M-Asp
bone	M-Atl
book	M-Atl
books	Spp, M-Asl
bounce	M-Sp
bounced	M-Asl
box	Hpp
boy	Hp, M-Spp
boy's	M-Spp
boys	Sp, M-Asp
brave	M-Sl
bright	M-Atl
broom	Hl
brother	M-Asl
brother's	M-Asl
brown	Hl, M-Sp
Brown's	M-Asp
bus	M-Atp

	B
busman	M-Sp
but	Hp, Spp, M-Sp
by	Hp, M-Sl

	C
cage	M-Sp
cages	Hl
cake	Hl, M-Atp
cakes	M-Asl
calf	Hl, M-Sl
call	Hpp, M-Asp
called	M-Sl
calling	Sl
calls	M-Atp
came	Hp, M-Sl
can	Hpp, Spp, M-Spp
can't	Sp, M-Spp
Cappy	M-Sp
Cappy's	M-Asp
caps	Hl
car	Spp
care	M-Sl
cars	Spp
cat	Hl, Sp, M-Asp
catch	M-Atl
cats	M-As, Atp
chair	Sl
children	M-Sp
choose	Hl
clean	Hl
close	M-Sl
clothes	Hl
coat	Sp
cold	Hp
color	Sl
colors	Hl
come	Hpp, Spp, M-Spp
comes	Spp, M-Spp
coming	Hl
could	Hp, M-Sl
couldn't	M-Sl
count	Hl, M-Sl
countdown	M-Asl
counted	M-Asl
cow	M-Atl
cowboy	M-Spp
cows	Hl, M-Asl

	C
cried	Hp
Cruz	Sl
cry	M-Sl
cut	Sl, M-Atl
cutest	M-Sl

	D
Dad	M-Sl
daddy	Hpp, M-Spp
Daddy's	M-Sl
dark	Hp
day	Hl, M-Sp
days	M-Asp
dear	Sp
Dick	Spp
did	Hp, Spp, M-Spp
didn't	M-Spp
dish	Hpp
do	Hpp, Spp, M-Spp
doctor	M-Sp
does	Hp, M-Sl
dog	Hpp, Spp, M-Sp
dogs	Spp, M-Asp
doing	M-Sl
done	Hl
don't	Hl, Sp, M-Sp
Dot	Hp
down	Hpp, Spp, M-Spp
dress	M-Sl

	E
each	M-Sl
earth	M-Sl
east	Sp
eat	Hp, Sp, M-Spp
eats	M-Sp
Ellen	M-Sl
Ellen's	M-Asl
enough	M-Sl
ever	Hl, M-Sl
everyone	Hl
everything	Hl

	F
fair	M-S1
fall	M-Atp
farm	H1, M-Sp
farmer	M-Sp
fast	Hp, Sp
father	Spp, M-Sp
Father's	M-As1
feet	Hp
fell	M-S1
felt	M-S1
fight	M-Atp
find	Hpp, Spp, M-S1
finding	S1
fire	Hp
first	H1, S1
fish	Hp, M-S1
five	H1, M-S1
flew	M-Sp
float	M-At1
floated	M-As1
floating	M-As1
flour	M-S1
fly	Hp
food	H1
foot	S1
for	Hpp, Spp, M-Spp
found	S1
four	H1
friend	M-As1
friends	M-S1
from	Hp, M-Sp
fun	Hp, Spp, M-Atp
funny	Hp, Spp

	G
gas	M-S1
gate	H1
gave	Hp
get	Hpp, Spp, M-Spp
gets	Spp, M-Asp
girl	Hp, M-S1
girl's	Sp, M-S1
girls	M-As1
give	Hpp, M-At1
go	Hpp, M-Spp
goat	Hp, M-Sp

	G
goats	M-Asp
going	S1, M-As1
gone	Hp
got	Hp, M-At1
good	Hpp, Sp, M-Sp
good-by	S1
grass	M-S1
green	H1, S1, M-Spp
guess	H1, Spp

	H
had	Hp, M-At1
hair	S1
haircut	S1
hand	S1
Hap	M-S1
happy	H1, Sp, M-As1
Hap's	M-As1
hard	Hp, M-At1
has	Hpp, S1, M-Sp
hat	Sp
have	Hpp, Spp, M-Sp
he	Hp, Sp, M-Spp
head	Hp
hear	Hp
heard	M-S1
helium	M-S1
hello	Sp, M-Sp
help	Hp, Spp, M-Sp
helps	M-As1
her	Hpp, M-At1
here	Hpp, Spp, M-Spp
herself	H1
hiccups	H1
high	Hp, M-At1
him	Hp, M-Sp
his	Hp, S1, M-Atp
hold	Hp, M-At1
holding	Hp
holidays	M-S1
home	Hpp, Sp, M-At1
hop	Hp
horse	H1, Sp, M-S1
horses	M-As1
hot	H1
house	Hp, Spp, M-Sp

	H
houses	M-Asl
how	Hp, Sp, M-Atp
hurry	M-Sp
hurt	M-Sl
	I
I	Hpp, Spp, M-Spp
ice	Hl
if	Hl, M-Atp
I'll	Hl, Sl
I'm	Hl
in	Hpp, Spp, M-Sp
into	Hp, M-Atl
is	Hpp, Spp
it	Hpp, Spp, M-Spp
	J
Jack	Hpp, M-Atl
Jane	Spp, M-Atl
Janet	Hpp
Jeff	M-Spp
Jim	M-Atl
Joe	Sl
Jones	M-Sl
jump	Hp, Spp, M-Sp
jumped	Hp, M-Asp
jumping	M-Asl
jumps	M-Asp
just	Hl, Sl, M-Atp
	K
kangaroo	Hl
kind	M-Atl
kitten	Hpp, Sl, M-Sl
kittens	M-Asl
kites	Hp
kept	Hl
knew	M-Atl
know	Hp, Sp, M-Sp
knows	M-Asp
	L
ladder	M-Spp
last	Sl, M-Sl

	L
laugh	Sl
laughed	Hl, M-Sp
left	Sl
legs	Sl
let	Hp, M-Atp
lets	M-Atp
let's	Sp
letter	M-Atl
letters	M-Asl
light	Hl, M-Sp
lights	M-Asp
like	Hp, Spp,M-Spp,M-Sl
likes	Spp, M-Spp
Linda	M-Sl
little	Hpp, Spp, M-Spp
live	Sl, M-Sl
lived	M-Asl
lives	M-Asl
look	Hp, Spp, M-Spp
looked	Hp, M-Atp
looking	M-Asl
looks	M-Spp
long	Hl
lost	Sl, M-Sp
love	M-Atl
loved	M-Asl
Lucy	M-Sl
Lucy's	M-Sl
	M
mad	M-Atl
made	Hl
make	Hp, Sp, M-Spp
make-believe	M-Sl
makes	M-Spp
man	Sl, M-Atp
many	Hl, M-Sl
march	Sl
Mary	M-Spp
may	Hpp, M-Sp
maybe	Hl, Sp
me	Hpp, Spp, M-Atp
men	M-Atl
meow	M-Sl
Mike	Spp
Mike's	M-Asp
milk	Hpp
mine	Hp
Miss	Sl

	M
mitten	Hpp
money	H1
moon	M-Sp
more	H1, M-S1
morning	M-S1
mother	Hpp, Spp, M-Spp
mothers	M-As1
mother's	M-As1
mountain	M-S1
Mr.	H1, M-Sp
Mrs.	H1, S1
much	H1
must	H1, M-Sp
my	Hpp, Spp, M-Sp

	N
name	S1, M-At1
names	M-As1
near	H1
never	H1
new	Hp, M-Sp
news	M-As1
next	H1, M-S1
night	Hp, M-Atp
no	Hpp, Spp, M-Atp
noise	M-S1
not	Hpp, Spp, M-Spp
now	Hp, Spp, M-Spp

	O
of	Hp, S1, M-Sp
off	S1, M-Spp
oh	Spp, M-Sp
old	M-S1
on	Hp, Sp, M-Spp
one	Hp, Spp, M-Sp
ones	Spp
open	H1
or	H1, M-Atp
orange	H1
orbit	M-At1
orbited	M-As1
orbits	M-As1
ostrich	H1
other	H1, M-As1
others	M-At1

	O
our	H1
out	Hp, Sp, M-Sp
over	H1, M-S1
own	H1, M-S1

	P
pack	M-At1
package	M-S1
packs	M-As1
pail	H1
paint	H1, M-Sp
Pal	H1
Pam	Spp
party	H1
Patches	M-S1
Patty	S1
peanut	H1, M-Sp
peanuts	M-Sp
pencil	H1
Penny	Spp
penny	Hpp
people	M-S1
pet	M-Atp
Pete	Sp
Peter	M-S1
Pete's	Sp
pets	M-S1
picnic	M-Sp
picnics	M-Asp
picture	H1, S1
pig	M-At1
pigs	H1
play	Hpp, Spp, M-Spp
played	M-As1
playing	M-As1
plays	M-Spp
please	Sp, M-Sp
pocket	H1, M-Atp
pole	M-At1
policemen	M-Spp, M-S1
pool	M-S1
porcupine	H1
prize	M-S1
prizes	H1, M-As1
Puff	Spp
pulled	Hp
puppy	M-S1

	P
puppy's	M-Asl
put	Hp, Sp, M-Sp
	Q
quarrel	M-Sl
	R
rabbit	Hp, M-Sl
raccoon	Hl
race	Hl
rain	Sl, M-Sl
raincoat	Sl
ran	Hp, Sp, M-Spp
reading	Sl
reads	Sp
Red	Hp
red	Spp, M-Spp
ride	Hl, Spp, M-Spp
rides	M-Spp
right	Sl, M-Sp
rocket	M-Sp
rockets	M-Asl
rope	Hl, M-Atl
Rosa	Sl
run	Hp, Spp, M-Sp
running	Hl
runs	M-Asp
	S
said	Hp, Spp, M-Spp
Sally	Spp
Sally's	Sp
sand	Hl
sat	Hl, M-Atl
saw	Hp, M-Sp
say	Hl, M-Atp
says	M-Asl
scared	M-Sl
school	Sl, M-Sl
screen	M-Sl
seat	M-Atl
see	Hpp, Spp, M-Spp
seen	Hl, M-Atl
sees	M-Sp
seven	Hl
she	Hp, Sp, M-Sp

	S
shoes	Sl
should	Hl
show	Hpp, Sl, M-Sp
showed	M-Atl
shows	M-Asp
sister	M-Sl
sisters	M-Asl
sit	M-Atp
sits	M-Atp
six	M-Sl
sleep	Hpp, Sl, M-Sl
Snapper	M-Sl
so	Hp, M-Atp
socket	M-Atp
some	Hl
somebody	Hp
something	Hp, Spp, M-Spp
soon	Hp, M-Atp
sound	Hp
Spot	Spp
spring	Sl
star	M-Sl
stay	M-Atl
still	Hp
stood	Hl
stop	Hl, M-Spp
story	Sl, M-Sp
street	Sl, M-Sl
streets	M-Sl
string	Hp
stripes	Hl
strong	Hl
Susan	Sp
	T
take	Hp, Sp, M-Spp
takes	M-Asp
talk	M-Sp
talked	M-Sl
talking	M-Sl
talks	M-Asp
tears	Hl
Teddy	M-Sl
Teddy's	M-Asl
teeny	Hl
tell	Hl, Sl, M-Sp
tells	M-Asp
tent	Hl

	T
Terry	M-S1
Terry's	M-S1
than	H1
thank	Hp, Sp, M-Sp
thanks	M-Asp
that	Hpp, Spp, M-Atp
that's	M-Sp
the	Hpp, Spp, M-Spp
their	M-S1
them	Hp, M-At
then	Hp, Sp, M-Sp
there	Hp, Sp, M-At
these	Hp
they	Hp, Sp, M-Sp
thief	M-S1
thing	H1, M-Asl
things	M-Atl
think	H1
this	Hpp, Spp, M-S1
those	Hp
three	H1, Spp, M-Sp
Tim	Spp
time	H1, Sp, M-Atl
tiny	H1
Tip	Hpp
to	Hpp, Spp, M-Spp
together	M-S1
told	M-Atl
Tom	Sp, M-S1
Tommy	M-S1
Tommy's	M-Asl
tomorrow	H1
too	Hpp, Sp, M-Sp
took	M-Atl
toy	H1
train	Sp
tree	S1, M-Spp
trees	M-Asp
trick	M-Asp
tricks	Hp, M-Sp
tried	M-Sp
truck	H1, M-S1
trucks	M-Asl
true	H1
trying	S1, M-Asl
twin	M-S1
twins	M-Asl
two	Hp, Spp, M-Sp

	T
T.V.	S1, M-Atl
	U
up	Hp, Spp, M-Spp
us	Hp, Spp, M-Atp
use	H1
	V
velvet	M-Spp
Velvet's	M-Spp
very	Hp, M-S1
violet	H1
	W
walk	H1, M-Atl
walked	S1, M-Asl
walking	S1, M-Asl
wall	M-Sp
want	Hp, Spp, M-Spp
wanted	Hp, M-Atp
wants	M-Spp
was	Hp
water	Hp
way	Hp, S1
we	Hpp, Spp, M-Atp
weather	M-S1
weigh	M-S1
went	Hp, M-Sp
were	H1, M-S1
wet	Hp, M-Atl
what	Hp, Spp, M-Spp
wheel	M-Asp
wheels	M-Spp
when	H1, M-S1
where	Hpp, M-Atl
which	H1, S1
whistle	M-S1
white	H1, M-S1
Whites	M-Asl
who	Hp, Spp, M-Spp
why	M-S1
will	Hpp, Spp
win	H1
wind	M-Atl
wing	S1

W

wink	Hl
wish	Hl
wishes	Hl
with	Hpp, Spp, M-Spp
won't	Hl, M-Atp
woof	M-Sl
woods	Hl
word	Hl, M-Sp
words	M-Asp
work	Hl, Spp, M-Sl
worked	Sl, M-Asl
working	Sl, M-Asl
would	Hl
write	M-Sl
writes	M-Asl
why	Hl

Y

yell	M-Atl
yelled	M-Atl
yelling	M-Atl
yellow	Hp, M-Spp
yes	Hp, M-Spp
you	Hpp, Spp, M-Spp
your	Hpp, M-Sp

Z

zebra	Hl
zero	M-Sp
zip	M-Sl
zipper	M-Atl